

In the Claims:

1. (Original) A logging tool for a borehole, the borehole having an interior wall, the logging tool comprising:

a tool body adapted to be inserted into the borehole;

a sensing device coupled to the tool body, the sensing device adapted to detect radial flow of conductive fluid entering or leaving the borehole interior wall, the sensing device being adapted to detect the conductive fluid flow adjacent the borehole interior wall;

shields disposed along the sensing device; and

voltage sensing electrodes disposed on the interior surfaces of the shields.

2. (Original) The logging tool of claim 1, wherein the shields are interconnected.

3. (Original) The logging tool of claim 1, wherein the shields comprise a conduit through which fluid may flow.

4. (Original) The logging tool of claim 1, wherein the voltage sensing electrodes comprise a point electrode.

5. (Original) The logging tool of claim 1, wherein the voltage sensing electrodes comprise a longitudinal electrode.

6. (Original) The logging tool of claim 1, wherein the voltage sensing electrodes substantially cover opposing sides of the shields.

7-30. Canceled

31. (Original) An inspection tool for a casing, the casing having an interior wall, the inspection tool comprising:

a tool body adapted to be inserted into the casing;

an electromagnetic sensing device coupled to the tool body, the electromagnetic sensing device having a plurality of electrodes positioned substantially equidistance from the interior wall and having a plurality of shields, each shield comprising a conduit through which fluid may flow and having a plurality of the electrodes therein; and

a magnetic field generator coupled to the tool body, the magnetic field generator adapted to generate a magnetic field substantially perpendicular to an imaginary line between two adjacent electrodes;

wherein the electromagnetic sensing device is adapted to measure an induced voltage caused by an inflow or outflow of conductive fluid through the interior wall of the casing.

32. (Original) The inspection tool according to claim 31, wherein the magnetic field is an alternating magnetic field.

33. (Original) The inspection tool according to claim 31, wherein the electromagnetic sensing device comprises a sensor loop, the sensor loop being adapted to exert outward pressure to maintain the sensor near the interior wall of the casing while the tool traverses the casing.

34. (Original) The inspection tool according to claim 33, wherein the sensor loop includes a spring disposed within the sensor loop to exert outward pressure.

35. (Original) The inspection tool according to claim 33, wherein the sensor loop is a continuous ring, wherein an inflow or outflow of conductive fluid is detectable along the circumference of the sensor loop.

36. (Original) The inspection tool according to claim 33, wherein the magnetic field generator comprises:

a first coil of wire adapted to generate a magnetic field proximate the sensor loop;

a second coil of wire adapted to generate a magnetic field proximate the sensor loop;

a ferromagnetic material disposed between the two coils; and

an alternating current generator coupled to the first coil and the second coil.

37. (Original) The inspection tool according to claim 31, wherein the electromagnetic sensing device further comprises:

a plurality of resistors, at least one resistor being coupled between two adjacent electrodes; and

a voltage measuring mechanism electrically coupled between two of the resistors.

38. (Original) The inspection tool according to claim 31, wherein the magnetic field generator comprises a first coil and a second coil.

39. (Original) The inspection tool according to claim 31, wherein the electromagnetic sensing device is coupled to the tool body at a loop high point and a loop low point, the loop high point and loop low point being about 180 degrees apart along the electromagnetic sensing device.

40. (Original) The inspection tool according to claim 31, wherein the electromagnetic sensing device is relatively insensitive to a flow of conductive fluid along a longitudinal axis of the casing.

41. (Original) An inspection tool for detecting a radial flow of conductive fluid through a casing, the inspection tool comprising:

a tool body adapted to be inserted into the casing;

an electromagnetic sensing device coupled to the tool body, the electromagnetic sensing device having a plurality of electrodes and a plurality of shields, each shield having a plurality of electrodes therein; and

a magnetic field generator adapted to generate a magnetic field substantially perpendicular to the imaginary line between two adjacent electrodes;

wherein the plurality of electrodes are oriented to detect the radial flow of conductive fluid through the casing.

42. (Original) The inspection tool according to claim 41, wherein the magnetic field generator generates an alternating magnetic field.

43. (Original) The inspection tool according to claim 41, wherein the electromagnetic sensing device comprises a sensor loop, the sensor loop being adapted to exert outward pressure to maintain the sensor near the casing interior wall while the tool traverses the casing.

44. (Original) The inspection tool according to claim 43, wherein the sensor loop includes a spring disposed within the sensor loop to exert outward pressure.

45. (Original) The inspection tool according to claim 43, wherein the sensor loop is a continuous ring, wherein an inflow or outflow of conductive fluid is detectable along the circumference of the sensor loop.

46. (Original) The inspection tool according to claim 43, wherein the magnetic field generator comprises:

a first coil of wire adapted to generate a magnetic field proximate the sensor loop;

a second coil of wire adapted to generate a magnetic field proximate the sensor loop;

a ferromagnetic material disposed between the two coils; and

an alternating current generator coupled to the first coil and the second coil.

47. (Original) The inspection tool according to claim 41, wherein the electromagnetic sensing device further comprises:

a plurality of resistors, at least one resistor being coupled between two adjacent electrodes; and

a voltage measuring mechanism electrically coupled between two of the resistors.

48. (Original) The inspection tool according to claim 41, wherein the alternating magnetic field generator comprises a first coil and a second coil.

49. (Original) The inspection tool according to claim 41, wherein the electromagnetic sensing device is coupled to the tool body at a loop high point and a loop low point, the loop high point and loop low point being about 180 degrees apart along the electromagnetic sensing device.

50. (Original) The inspection tool according to claim 41, wherein the electromagnetic sensing device is relatively insensitive to a flow of conductive fluid along a longitudinal axis of the casing.

51-91. Canceled